

Remarks

Applicants thank the Examiner for the courtesies extended to Applicants' undersigned representative, Stanislav Antolin, during the telephonic interview on October 31, 2002.

The August 1, 2002 Office Action has been carefully considered. After such consideration, Claims 1, 5 and 10 have been amended along the line suggested by the Examiner. Claims 62 and 67 have been amended to correct grammatical errors. Claims 50-58 and 107-114 have been canceled without prejudice or disclaimer to the subject matter therein as being drawn to a non-elected invention. As such, Claims 1-46 and 59-106 remain.

ok { The Office Action rejected Claims 4, 5 and 10 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Office Action stated that Claims 4 claimed the invention comprising "either 'a Schottky contact or an ohmic contact'. However, claim 5 and claim 10 are dependant claims of claim 4, where claim 5 refers to said Schottky contact without definitively selecting the Schottky contact thus apparently keeping the alternative. It is suggested that the phrase 'where the contact is a Schottky contact ... ' be added. Similar comments hold for claim 10." Applicants submit that the amendment of Claims 5 and 10 along the lines suggested by the Examiner renders the rejection of Claims 4, 5, and 10 moot. The 35 U.S.C. § 112, second paragraph, rejection being moot, should be withdrawn.

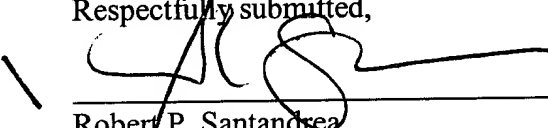
The Office Action rejected under 35 U.S.C. § 103(a) Claims 1-5, 14, 18, 19, 33, 36, 59-62, 71, 75 and 76 as being unpatentable over U.S. Patent No. 6,104,074(Chen) in view of U.S. Patent No. 5,679,152(Tischler et al.) and U.S. Patent No. 6,377,596(Tanaka et al.). Claims 6-13, 15-17, 20-22, 63-70, 72-74, 77-79 and 107 as being unpatentable over U.S. Patent No. 6,104,074(Chen) in view of U.S. Patent No. 6,034,404(Soares). Claims 23-32, 34, 35, 37-44, 80-92 and 94-101 as being unpatentable over U.S. Patent No. 6,104,074(Chen) in view of U.S. Patent No. 4,902,136(Mueller) and U.S. Patent No. 5,698,865(Gerner et al.). Claims 45-49 and 102-106 as being unpatentable over U.S. Patent No. 6,104,074(Chen) in view of U.S. Patent No. 6,121,634(Saito et al). Applicants traverse the 35 U.S.C. § 103(a) rejections of Claims 59-106. In regard to the rejection Claims 1 under 35 U.S.C. § 103(a), Applicants submit that the amendment of Claims 1 renders the rejection moot. The rejection of Claim 1 being moot renders the rejection of Claims 2-49 moot.

Chen neither discloses nor suggests the inventions of amended Claim 1 and its dependence, Claims 2-46, and pending Claim 59 and its dependence, Claims 60-106. Further,

the deficiencies of Chen are not cure by combination with any of Tischler et al., Tanaka et al., Soares, Mueller, Gerner et al., Saito et al and combination thereof. That is, the combination fails to show the structural limitations of amended Claim 1, pending Claim 59 as well as their dependence, and it is axiomatic that, where a combination of references fails to show the structural limitations of a claim, the obviousness rejection must fail. Thus, the 35 U.S.C. § 103(a) rejections of Claims 1-49 being moot and the 35 U.S.C. § 103(a) rejections of Claims 59-106 being improper should be withdrawn.

In light of the amendment and remarks presented herein, Applicants submit that Claims 1-46 and 59-106 of the case are in condition for immediate allowance and respectfully requests such action. If, however, any issues remain unresolved, the Examiner is invited to telephone the Applicants' counsel at the number provided below.

Respectfully submitted,


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ATTACHMENT A

Marked-up versions of amended Claims 1, 5, 10, 62 and 67 are provided below.

Marked-up version of Claim 1:

[c02] 1.(Amended)A photodetector (100, 200, 300), said photodetector (100, 200, 300), comprising:

d) a substrate (102, 202, 306), said substrate comprising gallium nitride having a dislocation density of less than about 10^3 cm^{-2} ;

e) at least one active layer (104, 302) disposed on said substrate (102, 202, 306); and

f) at least one conductive contact structure (106, 210, 308) affixed to at least one of said substrate (102, 202, 306) and said at least one active layer (104).

Marked-up version of Claim 5:

[c06] 5.(Amended)The photodetector (100, 200, 300) of Claim 4, wherein said contact comprises said Schottky contact (108, 310) [comprises] comprising at least one of a metal and a metal oxide selected from the group consisting of palladium, platinum, gold, aluminum, tin, indium, chromium, nickel, titanium, and oxides thereof.

ATTACHMENT A**Marked-up version of Claim 10:**

[c11] 10.(Amended)The photodetector (200, 300) of Claim 4, wherein said contact comprises said ohmic contact (212, 214, 312) [is] affixed to one of an n-doped active layer (224, 314) and said substrate (202, 306), and wherein said ohmic contact (212, 214, 312) comprises at least one metal selected from the group consisting of aluminum, scandium, titanium, zirconium, tantalum, tungsten, nickel, copper, silver, gold, hafnium, and rare earth metals.

Marked-up version of Claim 62:

[c63] 62.(Amended)The photodetector (100, 200, 300) of Claim 61, wherein said contact comprises said Schottky contact (108, 310) [comprises] comprising at least one of a metal and a metal oxide selected from the group consisting of palladium, platinum, gold, aluminum, tin, indium, chromium, nickel, titanium, and oxides thereof.

Marked-up version of Claim 67:

[c68] 67.(amended)The photodetector (200, 300) of Claim 61, wherein said contact comprises said ohmic contact (212, 214, 312) [is] affixed to one of an n-doped active layer (224, 314) and said substrate (202, 306), and wherein said ohmic contact (212, 214, 312) comprises at least one metal selected from the group consisting of aluminum, scandium, titanium, zirconium, tantalum, tungsten, nickel, copper, silver, gold, hafnium, and rare earth metals.